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EXAMINER	
MILLER, RYAN J	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/675,279	Applicant(s) JIANG, HONG
	Examiner Ryan J. Miller	Art Unit 2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 December 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,9,10,12-14,16,17,19,20 and 31-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,9,10,12-14,16,17,19,20 and 31-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 September 2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The response received on December 17, 2003 has been placed in the file and was considered by the examiner. An action on the merits follows.

Response to Arguments

2. Applicant's arguments filed December 17, 2003 have been fully considered. A response to these arguments is provided below.

Drawing Objections

Summary of Argument: The applicant argues that the amendment to the specification has overcome the objection under 37 CFR 1.84(p)(4).

Examiner's Response: The examiner agrees that this objection has been overcome based on the amendment. However, additional objections to the drawings presented in the action mailed September 17, 2003 have not been overcome. These objections will be represented below.

Prior Art Rejections

35 U.S.C. 102(e) rejections

Summary of Argument: The applicant argues that claim 1 has been amended to recite the subject matter of specifying bandwidths for the layer that are used, and forming multiple layers enhancement data, where each of the multiple layers has the respective specified bandwidth. This amendment completely distinguishes over the bit plane technique disclosed by Li (U.S. Patent No. 6,275,531 B1). The applicant also argues that claim 4 should be allowable for similar reasons along with the claims which depend therefrom. The applicant argues that claim 7 has been amended to recite that each of the layers has substantially equal bandwidth. This is not

possible using the bit plane technique, and should therefore be allowable for similar reasons as discussed with regard to claim 1. Finally, the applicant argues that claim 19 has been amended to specify a specified bandwidth requirement and should be allowable for the reasons discussed with regard to claim 1.

Examiner's response: Applicant's arguments with respect to claims 1, 4, and 19 have been considered but are moot in view of the new ground(s) of rejection necessitated by amendment.

Regarding the arguments directed toward claim 7, if two of the bit planes described by Li have the same number of ones, such as the MSB-plane and the second MSB-plane described at column 11, lines 59-62, then these bit planes will have "substantially equal amounts of bandwidth". Therefore, this limitation is met by the claim.

35 U.S.C. 103(a) rejections

Summary of Argument: Regarding claim 13, which has been amended to include the elements of original claim 15, the applicant argues that as amended this claim is completely different than the bit plane technique described in Li. Therefore, claim 13 should be allowable along with the claims which depend therefrom. Claim 16 should be allowable for similar reasons.

Examiner's response: The examiner acknowledged the differences between amended claim 13 and Li when rejecting claim 15 in the previous office action. Claim 15 was rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Li (U.S. Patent No. 6,275,531 B1) and Li et al. (the article titled "An Embedded DCT Approach to Progressive Image Compression"). The elements of claim 13 that are not disclosed by Li are taught in Li et al. as will be described in the rejection below.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "21" referring to a channel. Figure 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

4. The application was also filed without Figures 8b and 9. The applicant is required to do one of the following:

A) accept the application, as filed, without all of the drawing figures referred to in the specification;

B) file the omitted drawing figures with an oath or declaration in compliance with 37 CFR 1.63 and 37 CFR 1.164 referring to the omitted drawing figures and a petition under 37 CFR 1.182 with the petition fee set forth in 37 CFR 1.17(h), requesting the date of submission of the omitted drawing figures as the application filing date; or

C) file a petition under 37 CFR 1.53(e) with the petition fee set forth in 37 CFR 1.17(h) alleging that the drawing figures indicated as omitted was in fact deposited with the USPTO with the application papers, including any and all evidence supporting the allegation. See MPEP § 503. The petition fee will be refunded if it is determined that the drawing figures were in fact received by the USPTO with the application papers deposited on filing.

If applicant is willing to accept the application, as filed, without all of the drawing figures referred to in the application (item A above), applicant is required to submit an amendment to the specification canceling all references to the omitted drawing figures including any reference numerals shown only in the omitted drawing figures.

Any petition filed in accordance with item B or C above should be filed with the TC. The TC will match the petition with the application file and forward the application file with the petition to the Office of Petitions, along with a brief explanation as to the drawing figures that has been omitted on filing, for consideration of the petition in due course.

See MPEP § 601.01(g).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 4, 19, 31-34, 38 and 39 are rejected under 35 U.S.C. 102(e) as being anticipated by Hazra (U.S. Patent No. 6,510,553 B1).

As applied to claim 1, Hazra discloses a method comprising: specifying bandwidths for multiple layers of digital video as specified bandwidths (see column 6, lines 37-51: The reference describes that a bandwidth is specified for the base layer and each enhancement layer.); forming multiple layers of digital video enhancement data, where each of said multiple layers having a respective said specified bandwidth (see column 6, lines 42-51: The reference describes

that multiple layers enhancement data are formed each having a specific bandwidth. For instance, an enhancement layer 2 has a bandwidth of 10 K BPS.).

As applied to claim 19, Hazra discloses a method comprising: generating from a source video sequence a digital base video signal (see column 6, lines 37-42: The reference describes that the video stream comprises a plurality of layers including a base layer.); generating from the source video sequence a body of digital video enhancement data (see column 6, lines 42-51: The reference describes three enhancement layers which comprise a body of digital enhancement data.); and generating from the body of digital video enhancement data plural layers of digital video enhancement data, which each satisfy a specified bandwidth requirement (see column 6, lines 45-51: The reference describes a second and a third enhancement layer, each having a bandwidth of 10 K BPS (i.e. satisfy a specified bandwidth requirement.).

As applied to claim 31, Hazra discloses that the specifying comprises specifying a single bandwidth for each of said multiple layers (see column 6, lines 45-51: The reference describes that a bandwidth of 10 K BPS is specified for the second enhancement layer and that a bandwidth of 10 K BPS is specified for the third enhancement layer.).

As applied to claim 32, which is representative of claim 39, Hazra discloses that the forming comprises forming multiple layers which have digital ones and digital zeros, and wherein each of said multiple layers include substantially the same number of digital ones (see column 6, lines 45-51: The reference describes that the enhancement layers are digital signals and that the second and third enhancement layers have the same specified bandwidth. Therefore, the second and third enhancement layers will have substantially the same number of digital ones.).

As applied to claim 38, Hazra discloses that the specified bandwidth is substantially the same bandwidth for each of the plural layers (see column 6, lines 45-51: The reference describes that a bandwidth of 10 K BPS is specified for the second enhancement layer and that a bandwidth of 10 K BPS is specified for the third enhancement layer. 10 K BPS is substantially the same as 10 K BPS.).

As applied to claims 4, 33, and 34, which merely call for an article comprising a computer-readable medium which stores computer-executable instructions for performing the processing of claims 1, 31 and 32, Hazra discloses such an article since all of the processing performed by the system of Hazra is performed on a computer (see Fig. 2: Reference numeral 38 referring to a client system.).

7. Claims 7, 9, 10, 12, and 35 are rejected under 35 U.S.C. 102(e) as being anticipated by Li (U.S. Patent No. 6,275,531 B1).

As applied to claim 7, Li discloses a method comprising: processing layers of digital video enhancement data to enhance a base video signal, the layers having substantially equal amounts of bandwidth (see column 3, lines 11-16, lines 44-52, and column 5, lines 62-67: The reference describes that each enhancement layer is capable of carrying information complementary to the base layer information thereby enhancing the base layer. The reference also describes that the enhancement layers are determined based on the bandwidth of the transmission channel. The reference further describes that the number of enhancement layers are limited by the bandwidth requirements. These layers will, therefore, have approximately equal bandwidth requirements.).).

As applied to claim 9, Li discloses that the base video signal comprises a picture, and wherein each processed layer enhances the entire picture (see column 3, lines 11-16: The reference describes that adding the corresponding enhancement layers to the base layer improves the resulting images (i.e. enhances the entire picture).).

As applied to claims 10 and 12, which merely call for an article comprising a computer-readable medium which stores computer-executable instructions for performing the processing of claims 7 and 9, Li discloses such an article since all of the processing performed by the system of Li is performed on a computer (see Fig. 1: This figure shows the system used by Li.).

As applied to claim 35, Li discloses that the layers are digital values having substantially the same number of digital ones (see column 11, lines 59-62: The reference describes that the bit-planes (i.e. layers) are digital values and that the MSB-plane and the second MSB-plane have the same number of digital ones.).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 2, 3, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Hazra (U.S. Patent No. 6,510,553 B1) and Li (U.S. Patent No. 6,275,531). The arguments as to the relevance of Hazra in the rejection of claim 1 and Li in the rejection of claim 7 above are incorporated herein.

Claim 2 calls for the forming of a layer of video enhancement data to further comprise: selecting a threshold value based upon the bandwidth requirements; and generating a layer of video enhancement data based upon the threshold value. Claim 3 further calls for transmitting the layer of video enhancement data over a digital communication channel; and transmitting the threshold value over the digital communication channel. Hazra does not disclose the use of a threshold value to generate the enhancement data or transmitting the threshold value over a digital communication channel. However, Li, in the same field of endeavor of video coding and the same problem solving area of scalable video coding, discloses the features of claims 2 and 3 (see Fig. 1 and column 5, lines 47-67: Regarding claim 2, the reference describes that the number of bit-stream layers generated is a function of the total possible bandwidth. Therefore, since the layers are generated based on the bandwidth and the bandwidth determines the priority identifier, then the layers are generated based on their priority (i.e. threshold value). The reference further describes that each layer is assigned a priority identifier. This priority identifier acts as a threshold based upon the bandwidth requirements because only those layers with priority identifiers that satisfy the bandwidth requirement are transmitted. Regarding claim 3, as can be seen in Fig. 1, the enhancement data is transmitted over channel 60 and the reference further describes that the number of bit-stream layers reaching the destination point 100 can be further limited by the priority identifier (i.e. threshold). Therefore, this value must also be transmitted.).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Hazra by adding the use of a threshold and transmitting the threshold as taught in Li because the method used in Li overcomes the disadvantages of the

current MPEG-2 video coding standard as described at column 2, lines 51-67 of Li. Therefore, the use of the method disclosed by Li will increase efficiency and allow for scalable granularity.

As applied to claims 5 and 6, which merely call for an article comprising a computer-readable medium which stores computer-executable instructions for performing the processing of claims 2 and 3, the combination of Hazra and Li discloses such an article since all of the processing performed by the system of Hazra and Li is performed on a computer (see Fig. 1: This figure shows the system used by Li.).

10. Claims 13, 14, 16, 17, 36, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Li (U.S. Patent No. 6,275,531 B1) and Li et al. (the article titled "An Embedded DCT Approach to Progressive Image Compression").

As applied to claim 13, Li discloses a method comprising: receiving a layer of digital video enhancement data that achieves a bandwidth requirement (see Fig. 1 and column 3, lines 44-52: The reference describes determining a number of enhancement layer bit-streams based on the available bandwidth. These enhancement layers are received by demultiplexor 70.), and transmitting the layer over a digital communication channel (see Fig. 1: As can be seen from the figure, the enhancement data is transmitted over channel 60.).

As applied to claim 36, Li discloses that the layers are digital values having substantially the same number of digital ones (see column 11, lines 59-62: The reference describes that the bit-planes (i.e. layers) are digital values and that the MSB-plane and the second MSB-plane have the same number of digital ones.).

Claim 13 further calls for receiving a threshold value corresponding to the layer, wherein the layer comprises a `1' bit for each magnitude greater than or equal to the threshold value and

claim 14 calls for the layer of digital video enhancement data to be a first layer of digital video enhancement data that achieves a first bandwidth requirement, the method further comprising: receiving a second layer of digital video enhancement data that achieves a second bandwidth requirement, wherein the first bandwidth requirement is not equal to the second bandwidth requirement, and transmitting the second layer over the digital communication channel.

While Li discloses the use of bit planes to determine the enhancement layers, the reference does not disclose the type of processing described by claims 13 and 14. Li et al., in the same field of endeavor of video processing, does disclose such processing (see Section 3, Pages 202-203: The reference discloses that several layers are formed based on different threshold levels required by the bandwidth. The reference further describes that each layer is formed based on a significant threshold and that each coefficient is assigned a magnitude of '1' if it is greater than the threshold and a magnitude of '0' if it is less than the threshold.).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Li by adding the processing steps of Li et al. because this type of processing is "more efficient" and is "easier and can be done more accurately" (see Li et al.: Section 3, Page 204).

As applied to claims 16, 17, and 37, which merely call for an article comprising a computer-readable medium which stores computer-executable instructions for performing the processing of claims 13, 14, and 36, the combination of Li and Li et al. discloses such an article since all of the processing performed by the system of Li and Li et al. is performed on a computer (see Fig. 1: This figure shows the system used by Li.).

11. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Hazra (U.S. Patent No. 6,510,553 B1) and Li et al. (the article titled "An Embedded DCT Approach to Progressive Image Compression"). The arguments as to the relevance of Hazra in the rejection of claim 19 above are incorporated herein.

Claim 20 calls for the step of generating a layer of digital enhancement data to further comprise: selecting a threshold value; and forming a layer of digital enhancement data comprising a `1' bit for each magnitude greater than or equal to the threshold value. This element is absent from Hazra, but is clearly disclosed in Li et al. (see Section 3, Pages 202-203: The reference discloses that several layers are formed based on different threshold levels required by the bandwidth. The reference further describes that each layer is formed based on a significant threshold and that each coefficient is assigned a magnitude of '1' if it is greater than the threshold and a magnitude of '0' if it is less than the threshold.).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Hazra by adding the processing steps of Li et al. because this type of processing is "more efficient" and is "easier and can be done more accurately" (see Li et al.: Section 3, Page 204).

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan J. Miller whose telephone number is (703) 306-4142. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H. Boudreau can be reached on (703) 305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ryan J. Miller
Examiner
Art Unit 2621

Ryan J. Miller

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